



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/712,998	11/17/2003	Jun Toshimitsu	Q78497	9399

23373 7590 08/24/2004

SUGHRUE MION, PLLC
2100 PENNSYLVANIA AVENUE, N.W.
SUITE 800
WASHINGTON, DC 20037

EXAMINER

REDDICK, MARIE L

ART UNIT	PAPER NUMBER
----------	--------------

1713

DATE MAILED: 08/24/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/712,998

Applicant(s)

TOSHIMITSU ET AL.

Examiner

Judy M. Reddick

Art Unit

1713

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 11/17/03;02/09/04.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-11 is/are pending in the application.
- 4a) Of the above claim(s) 11 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-10 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☒ Claim(s) 1-11 are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 02/09/04.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

Priority

1. Receipt is acknowledged of papers submitted under 35 U.S.C. 119(a)-(d), which papers have been placed of record in the file.

Information Disclosure Statement

2. The information disclosure statement filed 02/09/04 has been considered and scanned into the application file.

Drawings

3. The drawings filed on 11/17/03 are acceptable.

Election/Restrictions

4. Restriction to one of the following inventions is required under 35 U.S.C. 121:
 - I. Claims 1-10, drawn to a flame retardant ethylene family resin composite, classified in class 523, subclass 204.
 - II. Claim 11, drawn to a flame retardant electric wire or cable, classified in class 174, subclass 68.1.
5. The inventions are distinct, each from the other because:
6. Inventions Group I and Group II are related as mutually exclusive species in an intermediate-final product relationship. Distinctness is proven for claims in this relationship if the intermediate product is useful to make other than the final product (MPEP § 806.04(b), 3rd paragraph), and the species are patentably distinct (MPEP § 806.04(h)). In the instant case, the intermediate product is deemed to be useful as a pressure sensitive adhesive-containing photosensitive recording medium and the inventions are deemed patentably distinct since there is nothing on this record to show them to be obvious variants. The intermediate product(1-10) is in mutually exclusive relationship with the final product(11) as per presumably a reaction taking place upon formation of the electric wire or cable engendering a final product substantially different from the intermediate product, i.e., the intermediate product loses its identity upon formation of the final product. Should applicant traverse on the ground that the species are not

Art Unit: 1713

patentably distinct, applicant should submit evidence or identify such evidence now of record showing the species to be obvious variants or clearly admit on the record that this is the case. In either instance, if the examiner finds one of the inventions anticipated by the prior art, the evidence or admission may be used in a rejection under 35 U.S.C. 103(a) of the other invention.

7. Because these inventions are distinct for the reasons given above and have acquired a separate status in the art as shown by their different classification, restriction for examination purposes as indicated is proper.

8. Because these inventions are distinct for the reasons given above and have acquired a separate status in the art because of their recognized divergent subject matter, restriction for examination purposes as indicated is proper.

9. During a telephone conversation with Mr. Paul Wilson on 08/19/04 a provisional election was made without traverse to prosecute the invention of Group I, claims 1-10.

Affirmation of this election must be made by applicant in replying to this Office action. Claim 11 has been withdrawn from further consideration by the examiner, 37 CFR 1.142(b), as being drawn to a non-elected invention.

Claim Rejections - 35 USC § 112

10. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

11. Claims 1-10 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

A) The recited "each respectively having a flame retardant agent including magnesium hydroxide and polyorganosilane" per claim 1 constitutes indefinite subject matter as per it not

being readily ascertainable as to how such further limits the antecedently recited "flame retardant particles dispersed in an ethylene family copolymer".

B) The recited "wherein each flame retardant particle(3 & 4) comprises polyorganosiloxane-treated magnesium hydroxide" per claims 3-5 constitutes indefinite subject matter as per a) it not being readily ascertainable as to how such further limits the antecedently recited "flame retardant particles"; b) the non-express establishment of proper antecedent basis for "polyorganosiloxane".

C) The recited "parts in weight" per claims 5 & 6 engenders awkwardly expressed claim language. Use of "parts by weight" is suggested.

D) The recited "process assisting agent" per claim 10 constitutes indefinite subject matter as per it not being readily ascertainable as to how such further limits the antecedently recited "resin composite".

Claim Rejections - 35 USC § 112

12. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

13. Claims 1-5, 9 & 10 are rejected under 35 U.S.C. 112, first paragraph, because the specification, while being enabling for a mixture of 20 to 40 parts by weight of an ethylene-vinyl acetate copolymer and 80 to 60 parts by weight of an ethylene-ethyl acrylate copolymer, does not reasonably provide enablement for an ethylene family copolymer falling within the broad scope of the claimed invention. The specification does not enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention commensurate in scope with these claims.

Claim Rejections - 35 USC § 102

14. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

15. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

16. Claims 1-10 are rejected under 35 U.S.C. 102(b or e) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Hasegawa et al(U.S. 4,671,896), Harashige et al(U.S. 5,317,051), Hayashi et al(U.S. 5,889,087), Mori(U.S. 6,107,413), Imahashi(U.S. 6,043,306), Hatanaka et al(U.S. 6,699,925 B2) and Hasegawa et al(U.S. 6,755,995 B1).

Hasegawa et al teach a flame-retardant composition obtained by mixing 100 parts by weight of halogen-free rubber or plastics with about 50 to 200 parts by weight of magnesium hydroxide particles having an average particle diameter of about 0.3 to about 2 μ m and about 5 to about 50 parts by weight of carbon black powder and then crosslinking the mixture with an organic peroxide, sulfur or a sulfur compound, as a vulcanizing agent(col. 1, lines 5-7 & 53-64), Hasegawa et al specifically teach that the rubber and plastics to be used in the flame-retardant resin composition include ethylene-alpha-olefin copolymer, ethylene-vinyl acetate copolymer, ethylene-ethyl acrylate copolymer and their blends(col. 2, lines 29-41). Hasegawa et al further specifically teach that it is desirable to add to the antecedently recited mixture, about 3 to about 10 parts by weight of an organopolysiloxane and basic lead compound (col. 4, lines 8-30). Hasegawa et al further specifically teach that magnesium hydroxide particles governed by a particle diameter of less than about 0.3 μ m has such great cohesive force that it does not

Art Unit: 1713

disperse thoroughly in the mixture and exercises adverse effects on the mechanical and other properties of the resulting composition (col. 2, lines 42-49), sufficient to establish dispersibility of the magnesium hydroxide particles in the rubber and plastics. More specifically, Hasegawa et al exemplify flame-retardant compositions derived from at least an ethylene-alpha-olefin copolymer, surface-treated magnesium hydroxide and an organopolysiloxane (TABLE 3, Runs 11-14).

Harashige et al teach a flame-retardant olefin polymer composition obtained by blending, in a conventional kneading machine, a) 99-60 % by weight of a polyolefin such as at least one of copolymers of alpha-olefins, copolymers of ethylene with unsaturated carboxylic acids or esters and ethylene-vinyl ester copolymers, b) 1-40 % by weight of a modified olefin polymer, c) 5-200 parts by weight of a flame retardant which includes hydrates of inorganic metallic compounds such as aluminum hydroxide, magnesium hydroxide and combinations thereof governed by an average particle diameter of 20 μm or less, preferably 10 μm or less and d) at least one component selected from the group consisting of i) a mineral oil, a wax or a paraffin, ii) a higher fatty acid or an ester, amide or metallic salt thereof, iii) a silicone, iv) a partial fatty ester of a polyhydric alcohol, etc. and v) a fluoric elastomer(the Abstract, col. 1, lines 10-20, col. 2, lines 1-65, col. 5, lines 25-62, col. 6, lines 25-28 and the Runs).

Hayashi et al teach a flame-retardant resin composition defined basically as containing (A) about 40 to about 93 % by weight of at least one resin selected from the group consisting of ethylene/vinyl acetate copolymer, ethylene/ethyl acrylate copolymer and an ethylene/alpha-olefin copolymer, (B) about 5 to about 50 % by weight of a linear ethylene/alpha-olefin copolymer, (C) about 2 to about 40 % by weight of a modified ethylene resin, (D) about 50 to about 250 parts by weight of an inorganic flame retardant which includes (surface-treated) hydrated inorganic flame retardants such as magnesium hydroxide particles and (E) about 0.05 to about 10 parts by weight of silicone oil(the Abstract, col. 1, lines 40-62, col. 5, lines 47-67, col. 6, lines 1-46, Runs and claims).

Mori teaches flame-retardant, silane-crosslinked polyolefin compositions obtained by melt-mixing a flame-retardant polyolefin which includes alpha-olefin homo- and copolymers such as ethylene/vinyl acetate copolymer, ethylene/acrylic acid copolymer and the like, a flame retardant such as (surface-treated) aluminum hydroxide, (surface-treated) magnesium hydroxide(50 to 200 parts by weight), wherein the surface-treatment agent includes a silicone derivative, a water-absorbing agent such as calcium oxide, magnesium oxide, and a silanol-condensing catalyst with a substantially water-free carrier polymer such as ethylene-ethyl acrylate copolymer, ethylene-vinyl acetate copolymer and mixtures thereof(the Abstract, col. 1, lines 5-11, col. 3, lines 15-67, col. 4, lines 5-66, col. 5, lines 4-45, col. 6, lines 8-46, Runs and Claims).

Imahashi teach flame-retardant thermoplastic resin compositions prepared by melt kneading at least (a) 100 pbw of thermoplastic resin such as ethylene-vinyl acetate copolymer, ethylene-ethyl acrylate copolymer, (b) 5 to 60 parts by weight of a halogen-containing flame retardant, (c) 3 to 20 parts by weight of a flame retardant aid, (d) 0.5 to 10 parts by weight of a silicone and (e) 5 to 30 parts by weight of (surface treated) magnesium hydroxide particles per 100 parts by weight of thermoplastic resin and governed by a secondary particle diameter of 0.2 to 6 μm (the Abstract, col. 1, lines 8-17, cols 3-6, the Runs and Claims).

Hatanaka et al teach a flame-retardant thermoplastic resin composition obtained by mixing 100 weight parts of thermoplastic resin which includes ethylene copolymers such as ethylene-vinyl acetate copolymer, ethylene-ethyl acrylate copolymer, etc., (B) 10 to 300 weight parts of particulate metal hydroxide governed by a particle size of between 0.01 and 30 μm such as magnesium and aluminum hydroxide (C) 0.01 to 50 weight parts of branched polyorganosiloxane having alkoxy groups, (D) 0.01 to 10 weight parts of branched polyorganosiloxane having silanol groups and (E) 0.01 to 10 weight parts of catalyst(the Abstract, col. 2, lines 58-67, col. 2, lines 1-67, cols. 3-5 and the Runs and Claims). Hatanaka et al further specifically teach that the particulate metal hydroxide is kneaded with the thermoplastic resin until a uniform dispersion is

obtained followed by sequentially adding and mixing the polyorganosiloxanes containing alkoxy groups and the branched polyorganosiloxanes(col. 6, lines 40-63).

Hasegawa et al teach a halogen-free flame retardant resin composition defined basically as containing 100 parts by weight of a polyolefin resin such as ethylene-vinyl acetate copolymer, ethylene-ethyl acrylate copolymer and blends thereof (col. 2, lines 41-67), not less than 5 and not more than 50 parts by weight of a hydrated inorganic compound such as (surface treated)magnesium hydroxide and aluminum hydroxide(col. 3, lines 9-28), not less than 1 part by weight and not more than 55 parts by weight of an auxiliary flame retardant which include a silicone compound such as an organosiloxane polymer(col. 5, lines 1-17). Hasegawa et al further specifically teach that when using ammonium molybdate-treated aluminum hydroxide as the hydrated inorganic compound, amounts not less than 5 parts by weight and less than 40 parts by weight based on 100 parts by weight of polyolefin resin are used (col. 3, lines 52-60). See also Runs 9 & 10 and the Claims.

Each of patentees anticipate the instantly claimed invention with the understanding that the flame-retardant compositions of each of patentees overlaps in scope with the claimed flame retardant ethylene family resin composites.

Although patentees, with the exception of Mori, do not expressly teach that the magnesium hydroxide particles are treated with silicone compounds, it is reasonably expected, that by contacting the magnesium hydroxide particles with the silicone compound and mixing under certain conditions per each of patentees would necessarily engender silicone compound-treated magnesium hydroxide particles, as claimed. As to the dispersibility property(1) and specific gravity property(2), it would be expected that these properties, if not taught, would be met by the flame retardant compositions of each of patentees since the flame retardant compositions are essentially the same as and made in essentially the same manner as the claimed ethylene family resin composite.

It has been held that where applicant claims a composition in terms of function, property or characteristic where said function is not explicitly shown by the reference and where the

examiner has explained why the function, property or characteristic is considered inherent in the prior art, it is appropriate for the examiner to make a rejection under both the applicable section of 35 USC 102 and 35 USC 103 such that the burden is placed upon the applicant to provide clear evidence that the respective compositions do in fact differ. In re Best, 195 USPQ 430, 433 (CCPA 1977); In re Fitzgerald et al., 205 USPQ 594, 596 (CCPA 1980).

As to the remaining dependent claims, if not taught or suggested, the limitation would have been obvious to the skilled artisan and with a reasonable expectation of success.

Even if it turns out that the claims are not anticipated, it would have been obvious to the skilled artisan to extrapolate from each of the disclosures of patentees, the precisely defined flame retardant ethylene family resin, as claimed, as per such having been within the purview of the general disclosures of patentees and with a reasonable expectation of success.


Conclusion


17. The additional prior to Ebrahimian et al(U.S. 6,429,423 B1), JP 2000248126 A(IINUMA et al) and JP-2000336215 A(SUZUKI et al), listed on the attached FORM PTO 892 is cited as of interest in teaching flame-retardant resin compositions, similar to those as claimed and are considered merely cumulative to the prior art supra. The prior art to Miyata et al is cited as of being illustrative of the general state of the art.

18. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Judy M. Reddick whose telephone number is (571)272-1110. The examiner can normally be reached on Monday-Friday, 6:30 a.m.-3:00 p.m..

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Wu can be reached on (571)272-1114. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).


Judy M. Reddick
Primary Examiner
Art Unit 1713

JMR 
08/23/04